

## NOTES ON THE GENUS CLERODENDRUM (VERBENACEAE). III

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## CLERODENDRUM Burm.

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Mostly woody plants, usually trees or shrubs, sometimes woody vines, rarely with underground stems, occasionally herbaceous or subherbaceous perennials, usually unarmed or rarely with the petiole-base spinescent, glabrous or variously pubescent, often glandulose or lepidote, occasionally myrmecophilous, often with subterranean stolons, mostly rapid-growing, sometimes cauliflorous; branches and branchlets usually more or less tetragonal; leaves simple, decussate-opposite or whorled, rarely scattered or approximate, exstipulate, deciduous or semi-evergreen to evergreen, of various shapes and sizes, sometimes anisophyllous, entire or variously dentate, sometimes lobed, mostly petiolate, rarely sessile or subsessile, membranous to coriaceous in texture, often fragile in drying and brunnescent; inflorescence cymose, determinate, centrifugal, the cymes mostly loose-flowered but sometimes dense and subcapitate, rarely reduced, pedunculate in the upper leaf-axils, paniculate at the apex of the branches or branchlets, often thyrsoïd, or densely aggregate in terminal corymbs or heads, rarely borne on leafless parts of the stem near ground level, the flowers rarely solitary or in axillary pseudoracemes of opposite fascicles, actinomorphic or more or less zygomorphic, often large and showy, complete, perfect, hypogynous, mostly entomophilous or the red-flowered ones ornithophilous and visited for nectar; calyx inferior, gamosepalous, green, sometimes the same color as the corolla or contrastingly red or white, campanulate to turbinate or rarely tubular, sometimes inflated, the rim truncate or subtruncate to 5-toothed or even 5-fid, rarely 4-lobed (*Cornacchinia*), often accrescent in age, wide-spreading and subtending the mature fruit or merely enclosing its basal portion, externally glabrous or variously pubescent, sometimes glandulose or lepidote; corolla mostly white, blue, violet, or

red, sometimes yellow, pink, or purple, gamopetalous, mostly hypocrateriform or infundibular, rarely "doubled" or semi-double, often more or less conspicuously zygomorphic (*Cyclonema*), the tube usually narrow-cylindric and straight, sometimes incurved and inflated throughout (*Cyclonema*) or only slightly ampliate at the apex, often greatly elongate (*Siphonanthus*) or more rarely only slightly surpassing the calyx during anthesis, the limb spreading in anthesis or reflexed after full anthesis, 5-parted, mostly subactinomorphic, sometimes plainly bilabiate, the lobes subequal or the posterior and exterior pairs slightly shorter and the anterior one larger (*Cyclonema*), sometimes concave; stamens 4, didynamous, inserted in the corolla-tube, usually long-exserted, rarely very short, horizontal or upwardly arched (*Cyclonema*), involute in bud, alternate with the corolla-lobes, eventually rolled back; anthers ovate or oblong, 2-locular, with parallel thecae, opening by longitudinal slits; pollen grains 3--6-colpate, oblate to subprolate, 42--76 x 43--71  $\mu$ , the amb circular, the exine 2  $\mu$  thick, the sexine granulate, with L0-pattern, the tectum with echinate processes, the echini 1.5--2 x 1--15  $\mu$ , the nexine thinner than the sexine; pistil single, superior, compound, 2- (rarely 3-)carpellate; style terminal, filiform, elongate, apically shortly 2-fid, the branches subulate, stigmatiferous, apically acute; ovary superior, imperfectly 4-loculate. mostly rather small and rotund or oblong, externally mostly glabrous, rarely spongy and wrinkled (*Cornacchinia*), each locule 1-ovulate, the ovules pendulous, high-laterally attached, hemianatropous; fruiting-calyx persistent, subtending or enclosing the fruit, often much accrescent, sometimes highly colored and with wide-spreading lobes; fruit drupaceous, mostly globose or obovoid, often 4-sulcate and apically more or less 4-lobed, zoöchorous, the exocarp usually more or less fleshy, sometimes scanty and dryish, often brightly colored or black when mature, the endocarp bony or crustaceous, smooth or variously rugose or even crested, usually separating at maturity into 4 pyrenes or these sometimes cohering in pairs (*Volkameria*), by abortion sometimes only 1--3-seeded; seeds oblong, with endozoic dissemination: endosperm absent or negligible; radicle inferior; chromosome number:  $x = 12$  or ?23,  $2x = 24, 26, 30, 46, 48, 52, 60, c.92, 108, \text{ or } 184$ .

Lectotype: *Clerodendrum infortunatum* L.

This is the largest genus in the family, very complex, consisting of about 584 specific and infraspecific taxa, natives of tropical and subtropical regions of both hemispheres, most abundant in Asia and Africa, poorly represented in the Americas except in cultivation and by naturalization. A few species extend into temperate zones. Six fossil species are known from the Tertiary of Europe and Africa. *Tetrathyranthus* A. Gray, often included in the synonymy of *Clerodendrum* [e.g. Durand (1888) and Baillon (1891)], actually belongs to that of *Faradaya* F. Muell. *Cyclonema* Hochst., with the corolla distinctly zygomorphic, the corolla-limb plainly bilabiate, the tube distinctly curvate and swollen, and the fruit not splitting at maturity or splitting into coherent pairs, is probably worthy of segregation as a distinct genus.

It is worthy of note that Baillon (1891) accepts *Ovieda* L. as the correct name for the genus herein being discussed, relegating *Clerodendron* and *Clerodendrum* to its synonymy, based on 1737 page priority.

[to be continued]